Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1.-7. (Cancelled)

8. (Currently Amended) A system for creation of an opening of controllable format through a layer of insulation material, comprising:

means for creating an opening through a layer of etch resist material provided over the surface of a layer of insulating material having been deposited over the surface of a substrate;

means for measuring an obtained critical dimension measurement of said opening created through said layer of etch resist material;

means, including a feedback mechanism, for assuring that the obtained critical dimension measurement of said opening created through said layer of etch resist material is within design specification, said feedback mechanism communicating with said means for creating an opening through a layer of etch resist material to control said critical dimension measurement of said opening;

means for creating an ~~said~~ opening through said layer of insulation material, whereby a diameter of <u>said opening through</u> said layer of insulation material is dependent on a diameter of said opening created through said layer of etch resist material; and

means, including a feedback mechanism, for assuring that said opening created through said layer of insulation material is within design specification.

9. (Previously Presented) The system of claim 8, said means, including a feedback mechanism, for assuring that an obtained critical dimension measurement of said

opening created through said layer of etch resist material is within design specification comprising:

means for linking to a software supervisory function, thereby including data transmission functions;

means for linking to a software function equally being linked to a software supervisory function, thereby including data transmission functions;

means for data manipulating capabilities, thereby including manipulating interdependent data;

means for interfacing with semiconductor equipment, thereby including equipment functioning in a supporting role to said semiconductor equipment; and

means for creating instructions for said semiconductor equipment, thereby including equipment functioning in a supporting role to said semiconductor equipment.

10. (Original) The system of claim 8, said means for assuring that said opening created through said layer of insulation material is within design specification comprising:

means for linking to a software supervisory function, thereby including data transmission functions;

means for linking to a software function equally being linked to a software supervisory function, thereby including data transmission functions;

means for data manipulating capabilities, thereby including manipulating interdependent data;

means for interfacing with semiconductor equipment, thereby including equipment functioning in a supporting role to said semiconductor equipment; and

means for creating instructions for said semiconductor equipment, thereby including equipment functioning in a supporting role to said semiconductor equipment.

11. (Original) The system of claim 8, further comprising means for creating an opening having non-linear sidewalls through a layer of insulation material by applying a high-polymer based etch to the surface of said layer of insulation material.

12. (Previously Presented) A system for creation of an opening of controllable format through a layer of insulation material, comprising:

means for software processing capabilities, said software processing capabilities comprising;

(i) first software processing capabilities being photoresist processing based; and

(ii) second software processing capabilities being insulating layer etch based;

means for providing a parameter having a first value of After Development Inspection Critical Dimension (ADI CD) to said first software processing capability, said ADI CD being a diameter of an opening being created through a layer of photoresist;

means for evaluating issuance of a first instruction, comprising:

(i) a first instruction having been issued, modifying said first value of ADI CD based on said first instruction, creating a second value of ADI CD; and

(ii) no first instruction having been issued, converting said step of evaluation for a first instruction having been issued into a no-op or void step;

means for coating a layer of photoresist over the surface of said layer of insulation material;

means for developing said layer of photoresist, creating an opening having a diameter of a second value of ADI CD through said layer of photoresist;

means for measuring said second value of ADI CD;

means for determining a first difference between said second value of ADI CD and said first value of ADI CD;

means for creating said first instruction based on said first difference, said first instruction comprising:

(i) continuing processing said substrate, said instruction of continue processing said substrate being indicative of said first difference being less than a first ADI CD inspection limit, said continue processing said substrate proceeding with a subsequently specified step of step of providing a parameter having a value of said second value ADI CD to said second software processing capability;

(ii) removing said developed layer of photoresist from the surface of said layer of insulation material, further invoke said step of modifying said first value of ADI CD based on said first instruction, said first value of ADI CD of said modifying taking on the value of said second value of ADI CD, followed by said steps specified herein following said step of evaluating issuance of a first instruction, said instruction of invoke said modifying said first value of ADI CD based on a first instruction being indicative of said first difference being less than a first ADI CD inspection limit;

(iii) discontinuing processing said substrate, said instruction of discontinue processing said substrate being Indicative of said first difference being more than a second ADI CD inspection limit, said instruction of discontinue processing said substrate further being indicative of a judgement that processing said wafer must be discontinued;

means for executing said first instruction;

means for providing a parameter having a value of said second value ADI CD to said second software processing capability;

means for first modifying said second value of ADI CD based on an equation, creating a first value of After Etch Inspection Critical Dimension (AEI CD);

means for evaluating issuance of a second instruction, comprising:

(i) a second instruction having been issued, modifying said first value of AEI CD based on said second instruction, creating a second value of AEI CD; and

(ii) no second instruction having been issued, converting said step of evaluation for a second instruction having been issued into a no-op or void step;

means for etching an opening having a diameter of a second value of AEI CD through said layer of insulation;

means for measuring said second value of AEI CD;

means for determining a second difference between said second value of AEI CD and said first value of AEI CD;

means for determining said second instruction based on said second difference, said second instructions comprising:

(i) continuing processing said substrate, said instruction of continue processing said substrate being indicative of said first difference being less than a first AEI CD inspection limit, said continue processing said substrate resulting in termination of said second software processing, thereby releasing said substrate for additional processing not under control of said first and second software processing capabilities;

(ii) invoking said second modifying said first value of AEI CD based on a second instruction, said first value of said second modifying of AEI CD taking on the value of said second value of AEI CD, followed by said steps specified herein following

said step of second modifying said first value of AEI CD based on a second instruction, said instruction of invoke said modifying said first value of AEI CD based on first instructions being indicative of said first difference being less than a first AEI CD inspection limit;

(iii) discontinuing processing said substrate, said instruction of discontinue processing said substrate being indicative of said first difference being more than a second ADI CD inspection limit; and

means for executing said second instruction.

13. (Original) The system of claim 12, said first software processing capabilities comprising:

means for linking to a supervisory software function;

means for accepting first data from and providing first data to said supervisory software function, thereby including data of ADI CD and AEI CD;

means for calculating data, creating first output data, based on first input data and in accordance with a first relationship as embodied in a first equation between said first input data and said first output value for ADI CD based on a first input value of ADI CD;

means for providing to and accepting from photoresist processing equipment data that relate to photoresist processing, thereby including a value of ADI CD;

means for providing to and accepting from photoresist related processing equipment instructions of or relating to performance of operations by said photoresist related processing equipment, thereby including an instruction to measure a diameter of an opening created through said layer of photoresist, thereby further including receiving first measurement results of a first diameter of a first opening created through said layer of photoresist;

means for calculating a first difference between numerical values, thereby included calculating a first difference between a first value of ADI CD and a measured value of ADI CD;

means for evaluating results obtained by said calculating a first difference between numerical values; and

means for creating first instructions relating to said first software processing capabilities being photoresist processing based, thereby including first instructions of terminating photoresist processing, of continuing photoresist processing or of invoking said function of calculating data, creating output data of said first software processing capabilities.

14. (Original) The system of claim 12, said second software processing capabilities comprising:

means for linking to said first software processing capabilities;

means for accepting second data from and providing second data to said second software processing capabilities, thereby including data of ADI CD and AEI CD;

means for calculating data, creating second output data, based on second input data and in accordance with a second relationship as embodied in a second equation between said second input data and said second output data, thereby including calculating a first output value for AEI CD based on a first input value of ADI CD, thereby further including calculating a second output value for AEI CD based on a second input value for AEI CD;

means for providing to and accepting from etch processing equipment data that relate to etch processing, thereby including a value of ADI CD, thereby further including a value of AEI CD;

means for providing to and accepting from etch related processing equipment instructions of or relating to performance of operations by said etch related processing equipment, thereby including an instruction to measure a diameter of an opening created through said layer of insulation material, thereby further including receiving first measurement results of a first diameter of a first opening created through said layer of insulation material;

means for calculating a second difference between numerical values, thereby included calculating a second difference between a first value of AEI CD and a measured value of AEI CD;

means for evaluating results obtained by said calculating a second difference between numerical values; and

means for creating second instructions relating to said second software processing capabilities being etch processing based, thereby including second instructions of terminating etch processing, of continuing etch processing or of invoking said function of calculating data, creating output data of said second software processing capabilities.

15. (Currently Amended) A system for creation of an opening of controllable format through a layer of insulation material, comprising:

means for creating an opening through a layer of etch resist material provided over the surface of a layer of insulating material having been deposited over the surface of a substrate;

means, including a feedback mechanism, for obtaining a critical dimension measurement of said opening created through said layer of etch resist material and assuring that said critical dimension measurement is within design specification, said feedback mechanism communicating with said means for creating an opening through a

layer of etch resist material to control said critical dimension measurement of said opening;

means for creating an opening having non-linear sidewalls through said layer of insulation material by applying a high-polymer based etch to the surface of said layer of insulation material, whereby a diameter of opening having non-linear sidewalls is dependent on a diameter of said opening created through said layer of etch resist material; and

means, including a feedback mechanism, for assuring that said opening created through said layer of insulation material is within design specification.

16. (Previously Presented) A system for creation of an opening of controllable format through a layer of insulation material, comprising:

means, including a feedback mechanism, for creating an opening through a layer of etch resist material provided over the surface of a layer of insulating material having been deposited over the surface of a substrate, such that the opening has a critical dimension measurement that is within design specification, said feedback mechanism communicating with said means for creating an opening through a layer of etch resist material to control said critical dimension measurement of said opening;

means for creating an said opening through said layer of insulation material, whereby a diameter of said layer of insulation material is dependent on a diameter of said opening created through said layer of etch resist material; and

means, including a feedback mechanism, for assuring that said opening created through said layer of insulation material is within design specification.

17. (Previously Presented) The system of claim 16, wherein said means, including a feedback mechanism, for creating an opening, include means for making

corrections to an original critical dimension measurement that is not within design specification.